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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,988	12/17/2003	Joost Jeroen Ottens	081468-0307259	4803
909	7590	07/22/2005	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			NGUYEN, HUNG	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/736,988

**Applicant(s)**

OTTENS ET AL.

**Examiner**

Hung Henry V. Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 13 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kondo (U.S.Pat. 6,710,857).

As to claim 13, Kondo discloses an article support (WH) to support a flat article (W) to place in a beam path of radiation (IL) and comprising all basic features of the instant claim such

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as: a clamp (see figure 1A) to clamp the article to said article support wherein the clamp is provided with a plurality of zones (1) to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article.

3. Claims 1-2, and 5-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Taniguchi et al (US 2004/0080734 A1).

With respect to claims 1 and 13, Taniguchi discloses an article support (37) to support a flat article (W) to place in a beam path of radiation (see figure 6) and comprising all basic features of the instant claims such as: a clamp (see figure 16) to clamp the article to said article support wherein the clamp is provided with a plurality of zones (51-55) located around a circumference of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article.

As to claim 2, Taniguchi teaches the article is supported by at least three support pillars (52-54) (see figure 16).

As to claims 5-6, Taniguchi discloses the support pillars being piezo pads (54) and actuatable.

As to claim 7, Taniguchi teaches at least of the plurality of zones comprising an individual controllable clamp (see section [0175] and section [0184]).

As to claim 8, Taniguchi teaches a height sensor (2) for detecting a local height of the article.

As to claims 9-10, Taniguchi further teaches a clamp control unit (101) for adjusting the clamp pressure of the plurality of zones to attain a leveled article in response to at least one of a

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detected local height of the article and a detected image quality (see section [0039] and section [0185-0187]).

As to claim 11, Taniguchi teaches the plurality of zones having sectioned pressured zones to create a relatively different backfill gas pressure (see section [0175]).

4. Claims 1-2, 5-11 and 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by McKinley et al (U.S.Pat. 5,724,121).

With respect to claims 1 and 13, McKinley et al (figure 11-12) discloses an article support (502) to support a flat article (28) to place in a beam path of radiation (see figure 1) and comprising all basic features of the instant claims including a clamp (see figure 12) to clamp the article to said article support wherein the clamp is provided with a plurality of zones (see abstract) located around a circumference of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article.

As to claim 2, McKinley teaches the article is supported by at least three support pillars (524) (see figure 11).

As to claims 5-6, McKinley et al discloses the support pillars being piezo pads (524) and actuable.

As to claim 7, McKinley teaches at least of the plurality of zones comprising an individual controllable clamp (see col.18, lines 49-67).

As to claim 8, McKinley teaches a height sensor (508) for detecting a local height of the article.

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As to claims 9-10, McKinley further teaches a clamp control unit (522) for adjusting the clamp pressure of the plurality of zones to attain a leveled article in response to at least one of a detected local height of the article and a detected image quality.

As to claim 11, McKinley et al teaches the plurality of zones having sectioned pressured zones to create a relatively different backfill gas pressure (see figure 11).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable either over Taniguchi et al (US 2004/0080734 A1) or McKinley et al (U.S. Pat. 5,724,121).

With respect to claims 3-4, Taniguchi or McKinley discloses a lithographic projection apparatus comprising substantially all of the limitations of the instant claims including the article support having a plurality of support pillars, as discussed above. Taniguchi et al/or McKinley does not expressly disclose that the article support consists of three pillars or consists of four support pillars. However, for example, Taniguchi et al suggests that a plurality of article support are provided at an interval which is sufficient to support the article (see section [0175]). In view of such teachings, it is the Examiner's position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the lithographic projection apparatus of Taniguchi or McKinley, consisting of three or four support pillars so that it is

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possible to secure an excellent flatness of the article and thus the quality of the images to be printed is greatly improved.

7. As to claim 12, Taniguchi or McKinley discloses substantially all basic features of the instant claims except for the article/or substrate being a reticle. Since it is well known per se that the reticle/mask in a lithographic projection apparatus has the problem of deformation/ or bending/undulation due to the gravity and thermal expansion as the substrate/wafer, it would have been obvious to a skilled artisan to utilize the support as taught by Taniguchi or McKinley for supporting the reticle. The purpose of doing so would have been to prevent the deformation/bending of the reticle and whereby the throughput of apparatus is improved.

***Prior Art Made of Record***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shimada (U.S.Pat. 6,760,094) is cited for its teaching of an article support (50) to support a flat article (W) to be placed in a beam path of radiation and having a clamp to clamp the article to the article support wherein the clamp is provided with a plurality of suction areas (45 A-D) located around a circumference of the article support (see figure 2) to create a locally adjusted pressure so as to maintain flatness of the article.

***Response to Amendment/Argument***

9. Applicant's amendment filed May 10, 2005 have been entered. Claim 13 has been amended. Claims 14-18 have been cancelled. Applicant's arguments with respect to prior art rejection have been carefully reviewed but they are not found persuasive. The applicant is reminded that the claimed subject matter to examination will be given their broadest reasonable

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interpretation consistent with the specification, and limitations appearing in the specification are not be read into the claims. In re Yamamoto, 740 F. 2d 1569, 1571, 222 USPO 934, 936 (Fed.Cir. 1984).

With this in mind, the discussion herein will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitation that is not in the claims or any argument that is irrelevant to or does not relate to any specific claimed language will not be warranted.

With respect to claim 13, Applicant argues that amended claim 13 overcomes the prior art of Kondo since “nowhere does Kondo disclose or suggest a clamp that is provided with a plurality of zones *located around a circumference* of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article”; the Examiner respectfully disagrees with the applicant. Kondo meets the limitations as broadly claimed since Kondo teaches (see figure 1a) a plurality of supporting members (1) placed around the peripheral of the substrate support wherein the supporting members are connected to a suction mechanism which sucks the substrate placed on the plurality of support members (see col.3, lines 20-25). It is the Examiner’s position that in the broadest sense, the plurality of supporting members (placed around the peripheral of the substrate support) can be regarded as “a plurality of zones and located around circumference of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article as claimed.

Also, Applicant argues that Taniguchi fails to disclose or suggest “a clamp that is provided with a plurality of zones *located around a circumference* of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article”;



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the Examiner respectfully disagrees because Taniguchi meets the limitations as claimed. As shown in figure 16, Taniguchi discloses a plurality of vacuum adsorbing aperture (55)/zones located around the peripheral boundary of the substrate support (37) and connected to vacuum pump (56) to independently control/adjust pressure to as to provide a local bending moment to locally bend the substrate.

Regarding claims 1-2, 5-11 and 13, Applicant argues that the regions (519) disclosed by McKinley et al are not located around a circumference of the article support, as recited; the Examiner disagrees. As clearly illustrated in figure 1 of McKinley et al, at least regions (519) which are connected to supply paths (9) and (12), can be considered as regions located around a circumference of the article support (1) as broadly claimed in the instant claims of the present invention.

It is noted that the Applicant does not separately argue the distinct patentability of the dependent claims. Therefore, it is assumed that dependent claims are not additionally patentable over and above the patentability of independent claims.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Hung Henry V Nguyen**  
**Primary Examiner**  
**Art Unit 2851**

hvn  
7/13/05